



SEQUENCE LISTING

GENERAL INFORMATION:

- (i) APPLICANT: Weiner, Amy J.
Houghton, Michael
- (ii) TITLE OF INVENTION: Conserved Motif of Hepatitis C Virus
E2/NS1 Region
- (iii) NUMBER OF SEQUENCES: 134
- (iv) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE: Chiron Corporation
(B) STREET: 4560 Horton Street
(C) CITY: Emeryville
(D) STATE: CA
(E) COUNTRY: USA
(F) ZIP: 94608-2916
- (v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25
- (vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER: US 08/823,980
(B) FILING DATE: 25-MARCH-1997
(C) CLASSIFICATION:
- (vii) ATTORNEY/AGENT INFORMATION:
(A) NAME: Rosen, Mark J.
(B) REGISTRATION NUMBER: 39,822
(C) REFERENCE/DOCKET NUMBER: CHIR-0108
- (ix) TELECOMMUNICATION INFORMATION:
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(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 6 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
(A) NAME/KEY: Xaa
(B) LOCATION: 1
(D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Arg, Asp, Gly, Lys, Ser,

or Thr"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /label= v
/note= "Represents Ile, Leu,

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Leu or Phe"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala or Gly"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Xaa Xaa Xaa Xaa Xaa Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label= Dpr
/note= 2,3-diaminopropionic is acetyl cysteine

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /label= Ahe
/note= 2-amino heptanoic is butyl alanine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Xaa Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser
1 5 10 15

Gly Phe Val Ser Leu Leu Ala Pr
20

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 5 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Val Ser Leu Leu Ala
1 5

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 7 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Ser Leu Leu Ala Pro Gly Ala
1 5

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 5 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Leu Ala Pro Gly Ala

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Pro or Ser"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Ser Leu Leu Xaa Xaa Gly Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Pro or Ser"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Ser Leu Phe Xaa Xaa Gly Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid

(C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 1
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 3
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 8
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 14
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 16
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 17
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 21
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 22
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:
 (A) NAME/KEY: Xaa
 (B) LOCATION: 24
 (D) OTHER INFORMATION: /label= variable
 /note= "Represents Any Amino Acid"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 27
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Any Amino Acid"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Xaa Thr Xaa Val Thr Gly Gly Xaa Ala Ala Arg Thr Thr Xaa Gly Xaa
1 5 10 15
Xaa Ser Leu Phe Xaa Xaa Gly Xaa Ser Gln Xaa Ile Gln Leu Ile
 20 25 30

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Ala Thr Tyr Ala Thr Gly Ala Ala Gln Gly His Ala Thr Asn Ser Phe
1 5 10 15
Val Ser Leu Phe Arg Ser Gly Ala Ser Gln Asn Leu Lys Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Ser Thr Gln Val Thr Gly Gly Gln Ala Ala His Thr Val Arg Gly Val
1 5 10 15
Ala Ser Ile Phe Ser Pro Gly Ser Arg Gln Asp Ile Ser Leu Ile
 20 25 30

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Ser Thr His Val Met Gly Ala Gln Gln Gly Arg Val Ala Lys Gly Phe
1 5 10 15

Thr Ser Leu Phe Gly Pro Gly Pro Ala Gln Lys Ile Gly Leu Ile
 20 25 30

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Ser Thr His Val Thr Gly Ala Val Gln Gly His Ser Ile Arg Gly Leu
1 5 10 15

Thr Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Glu	Thr	His	Val	Thr	Gly	Gly	Ile	Ala	Ala	Lys	Thr	Thr	Ala	Ser	Leu
1				5				10						15	
Thr	Gly	Leu	Phe	Asn	Leu	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
		20					25						30		

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Glu	Thr	His	Val	Thr	Gly	Gly	Asn	Ala	Gly	Arg	Ala	Ala	Ala	Gly	Ile
1				5				10						15	
Ala	Gly	Leu	Phe	Thr	Leu	Gly	Ala	Lys	Gln	Asn	Val	Gln	Leu	Ile	
		20					25						30		

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Gln	Thr	Arg	Val	Thr	Gly	Gly	Thr	Ala	Ala	Gln	Ser	Thr	Ala	Arg	Ile
1				5				10						15	
Ala	Gly	Leu	Phe	Ser	Leu	Gly	Ala	Arg	Gln	Asn	Ile	Gln	Leu	Ile	
		20					25						30		

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Gln	Thr	His	Val	Met	Gly	Gly	Thr	Ala	Gly	Arg	Asn	Ala	Tyr	Gly	Leu
1				5				10					15		
Thr	Ser	Phe	Leu	Ser	Val	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Glu	Thr	His	Val	Met	Gly	Gly	Ala	Ala	Ser	Ser	Thr	Thr	Tyr	Arg	Phe
1				5				10					15		
Ala	Ser	Leu	Phe	Thr	Ser	Gly	Pro	Ala	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Ala	Ser	Thr	Thr	Ala	Thr	Phe
1				5				10					15		
Ser	Lys	Leu	Phe	Met	Pro	Gly	Ala	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Gly	Thr	Thr	Arg	Val	Gly	Gly	Ala	Ala	Ala	Arg	Thr	Thr	Ser	Ser	Phe
1				5					10					15	
Ala	Ser	Leu	Leu	Thr	His	Gly	Pro	Ser	Gln	Asn	Ile	Gln	Leu	Val	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gly	Thr	His	Val	Thr	Gly	Gly	Ala	Ala	Ala	Arg	Asp	Ala	Phe	Arg	Phe
1				5					10					15	
Ser	Ser	Leu	Phe	Thr	Arg	Gly	Pro	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Ala	Thr	Asn	Met	Thr	Gly	Gly	Ala	Pro	Ala	Arg	Thr	Thr	Tyr	Lys	Leu
1				5				10						15	
Thr	Thr	Leu	Phe	Ser	Tyr	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

His	Asn	His	Val	Thr	Gly	Gly	Thr	Ser	Ala	Arg	Asn	Thr	Phe	Gly	Ile
1			5					10						15	
Thr	Thr	Leu	Phe	Thr	Gln	Gly	Pro	Ser	Gln	Lys	Leu	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Gly	Thr	His	Val	Thr	Gly	Gly	Ala	Ala	Ala	Arg	Asn	Ala	His	Ser	Leu
1			5					10						15	
Thr	Ser	Leu	Leu	Ala	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Thr	Thr	Arg	Val	Ser	Gly	Gly	Thr	Ala	Ala	His	Thr	Thr	Ala	Gly	Leu
1			5					10						15	
Thr	Ser	Leu	Phe	Ser	Pro	Gly	Pro	Arg	Gln	Asn	Ile	His	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Thr	Thr	His	Val	Ser	Gly	Gly	Thr	Ala	Gly	Arg	Thr	Thr	Ala	Ser	Leu
1				5				10					15		
Thr	Ser	Phe	Phe	Ala	Pro	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Thr	Thr	His	Val	Thr	Gly	Gly	Ala	Thr	Gly	His	Thr	Thr	Ser	Gly	Ile
1				5				10					15		
Ala	Ser	Leu	Phe	Leu	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Asp	Thr	Tyr	Ala	Ser	Gly	Gly	Ala	Gln	Gly	Arg	Ser	Thr	Leu	Gly	Phe
1				5				10					15		
Thr	Ser	Leu	Phe	Thr	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Asp Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Ala Thr
1 5 10

Thr Ser Leu Phe Ala Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Arg Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Thr Thr His Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Thr Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Gln Thr Tyr Val Thr Gly Gly Lys Ala Ala Gln Thr Val Ser Gly Phe
1 5 10 15

Thr Gly Leu Phe Ser Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Asp	Thr	Tyr	Val	Ser	Gly	Gly	Ala	Ala	Ala	Arg	Ser	Ile	Ser	Gly	Phe
1				5					10					15	
Thr	Ser	Leu	Phe	Thr	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20					25						30		

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Ser	Thr	Tyr	Val	Thr	Gly	Gly	Glu	Ala	Ser	Arg	Thr	Thr	Arg	Gly	Phe
1				5					10					15	
Ala	Ser	Leu	Phe	Thr	Leu	Gly	Ser	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
		20					25						30		

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Asn	Thr	Tyr	Val	Thr	Gly	Gly	Ser	Ala	Gly	Arg	Ala	Val	Ala	Gly	Phe
1				5					10					15	
Ala	Gly	Leu	Leu	Gln	Pro	Gly	Ala	Lys	Gln	Asn	Val	Gln	Leu	Ile	
		20					25						30		

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids

(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

His	Thr	Arg	Val	Thr	Gly	Gly	Gln	Val	Ala	Phe	Arg	Thr	His	Gly	Leu
1				5					10					15	
Val	Ser	Leu	Phe	Thr	Gln	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

His	Thr	His	Val	Thr	Gly	Gly	Arg	Val	Ala	Ser	Ser	Thr	Gln	Ser	Leu
1				5					10					15	
Val	Ser	Trp	Leu	Ser	Gln	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

His	Thr	Arg	Val	Thr	Gly	Gly	Val	Gln	Gly	His	Val	Thr	Ser	Thr	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Arg	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids

(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Asn	Thr	Arg	Val	Thr	Gly	Gly	Val	Gln	Gly	Arg	Asp	Thr	Ser	Gly	Leu
1				5				10						15	
Val	Ser	Leu	Phe	Ser	Leu	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Asp	Thr	His	Val	Thr	Gly	Gly	Ala	Gln	Ala	Lys	Thr	Thr	Asn	Arg	Leu
1				5				10						15	
Val	Ser	Met	Phe	Ala	Ser	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Glu	Thr	His	Val	Thr	Gly	Gly	Ala	Ser	Ala	Arg	Thr	Thr	Gln	Arg	Phe
1				5				10						15	
Thr	Ser	Phe	Phe	Asp	Leu	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids

(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Thr	Thr	Tyr	Met	Thr	Gly	Gly	Ala	Asn	Ala	Arg	Thr	Thr	Gln	Gly	Phe
1				5				10					15		
Val	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ala	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Glu	Thr	His	Val	Thr	Gly	Gly	Thr	Ser	Ala	Arg	Thr	Thr	Gln	Gly	Phe
1				5				10					15		
Val	Ser	Leu	Phe	Ser	Ala	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Gly	Thr	His	Val	Thr	Gly	Gly	Gln	Ala	Ala	Arg	Thr	Thr	Gln	Ser	Phe
1				5				10					15		
Thr	Ser	Leu	Phe	Ser	Pro	Gly	Pro	Gln	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids

(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Arg	Thr	His	Val	Thr	Gly	Gly	Lys	Ala	Ala	His	Thr	Thr	Lys	Gly	Phe
1				5				10					15		
Ala	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
		20					25					30			

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Glu	Thr	Arg	Val	Thr	Gly	Ala	Val	Gln	Gly	His	Gly	Ala	Leu	Gly	Leu
1				5				10					15		
Ala	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
		20					25					30			

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Glu	Thr	Arg	Val	Thr	Gly	Ala	Ile	Ala	Gly	Arg	Thr	Ala	Ser	Ser	Phe
1				5				10					15		
Ala	Gly	Leu	Phe	Thr	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20					25					30			

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Glu	Thr	Arg	Val	Thr	Gly	Gln	Gln	Val	Gly	Arg	Thr	Thr	Gln	Ser	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ser	Gln	Thr	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Gln	Thr	Arg	Val	Thr	Gly	Ala	Gln	Val	Gly	Arg	Thr	Thr	Ser	Ser	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ser	Gln	Asn	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Arg	Thr	Gln	Val	Thr	Gly	Ala	Gln	Ala	Gly	His	Thr	Thr	Ser	Gly	Leu
1				5					10					15	
Ala	Ser	Leu	Phe	Thr	Pro	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	His	Thr	Val	Ser	Gly	Phe
1				5					10					15	
Val	Ser	Leu	Leu	Ala	Pro	Gly	Ala	Lys	Gln	Asn	Val	Gln	Leu	Ile	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:51:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	His	Thr	Val	Thr	Gly	Ile
1				5					10					15	
Ala	Ser	Leu	Phe	Thr	Ser	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ser	Thr	His	Val	Thr	Gly	Gly	Thr	Ala	Ala	His	Thr	Val	Ala	Gly	Phe
1				5					10					15	
Ser	Ser	Leu	Phe	Thr	Val	Gly	Pro	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Glu	Thr	His	Val	Thr	Gly	Gly	Ala	Ala	Ala	Tyr	Thr	Ala	Ala	Gly	Leu
1				5					10					15	
Ala	Ser	Leu	Phe	Thr	Ser	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	Arg	Thr	Thr	Ala	Gly	Leu
1				5					10					15	
Val	Gly	Leu	Leu	Thr	Pro	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Gly	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	Arg	Ala	Thr	Ala	Gly	Ile
1				5					10					15	
Ala	Gly	Leu	Leu	Thr	Pro	Gly	Ala	Arg	Gln	Asn	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Lys Thr His Val Thr Gly Gly Ser Ala Ala Arg Thr Thr Ser Gly Ile
1 5 10 15

Ala Ser Leu Leu Thr Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Lys Thr Tyr Val Thr Gly Gly Ser Gln Ala Gln Ala Thr Phe Gly Phe
1 5 10 15

Thr Ser Leu Leu Gln Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:58:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Glu Thr Thr Val Thr Gly Gly Ser Ala Ala His Gly Ala Leu Gly Ile
1 5 10 15

Ala Ser Leu Phe Asn Gln Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:59:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Glu Thr Tyr Val Thr Gly Gly Ala Ser Ala Arg Ser Thr Phe Thr Leu
1 5 10 15

Val Gly Leu Phe Lys Gln Gly Ser Gln Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Gln Thr Tyr Val Ser Gly Gly Ser Ser Gly Arg Thr Thr Ser Gly Leu
1 5 10 15

Val Ser Ile Phe Ser Pro Gly Ala Ser Gln Asn Leu Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:61:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Glu Thr Tyr Val Ser Gly Gly Ala Ala Ala Gln Thr Thr Ala Arg Phe
1 5 10 15

Ala Gly Phe Phe Gln Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:62:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Glu Thr Tyr Val Ser Gly Gly Ser Ala Ala Gln Thr Thr Ala Gly Phe
1 5 10 15
Val Arg Leu Phe Glu Thr Gly Pro Lys Gln Asn Ile Gln Leu Ile
 20 25 30

(2) INFORMATION FOR SEQ ID NO:63:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Ser Thr Tyr Val Ser Gly Gly Ala Gln Ala Arg Ala Ala Gln Gly Ile
1 5 10 15
Thr Ser Leu Phe Ser Arg Gly Ser Ser Gln Lys Ile Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:64:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Ser Thr Tyr Val Thr Gly Gly Thr Gln Gly Arg Ala Ala Ser Gly Leu
1 5 10 15
Thr Ser Leu Phe Ser Ala Gly Ala Ser Gln Asn Ile Gln Leu Ile
 20 25 30

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Asn	Thr	Tyr	Val	Ser	Gly	Gly	Thr	Ala	Gly	His	Thr	Gly	His	Gly	Leu
1				5					10					15	
Thr	Ala	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Ser	Thr	Ile	Val	Ser	Gly	Gly	Thr	Val	Ala	Arg	Thr	Thr	His	Ser	Leu
1				5					10					15	
Ala	Ser	Leu	Phe	Thr	Gln	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Glu	Thr	Tyr	Thr	Ser	Gly	Gly	Ala	Ala	Ser	His	Thr	Thr	Ser	Thr	Leu
1				5					10					15	
Ala	Ser	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:68:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

His Thr Leu Thr Thr Gly Gly His Ala Ala Arg Leu Thr Ser Gly Phe
1 5 10 15

Ala Gly Leu Phe Thr Pro Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Glu Thr Ile Val Ser Gly Gly Gln Ala Ala Arg Ala Met Ser Gly Leu
1 5 10 15

Val Ser Leu Phe Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:70:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Glu Thr Tyr Thr Ser Gly Gly Asn Ala Gly His Thr Met Thr Gly Ile
1 5 10 15

Val Arg Phe Phe Ala Pro Gly Pro Lys Gln Asn Val His Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:71:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Thr Thr Tyr Thr Thr Gly Gly Asn Ala Ala Arg Thr Thr Gln Ala Leu
1 5 10 15

Thr Ser Phe Phe Ser Pro Gly Ala Lys Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:72:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Glu Thr Tyr Thr Thr Gly Gly Ser Thr Ala Arg Thr Thr Gln Gly Leu
1 5 10 15

Val Ser Leu Phe Ser Arg Gly Ala Lys Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:73:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Ala Thr Tyr Thr Ser Gly Gly Ser Ala Ala Arg Thr Thr Gln Gly Phe
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ser Gln Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:74:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Ala Thr Tyr Thr Thr Gly Gly Ser Val Ala Arg Thr Thr His Gly Phe
1 5 10 15
Ser Ser Leu Phe Ser Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Val Thr Tyr Thr Thr Gly Gly Ser Gln Ala Arg His Thr Gln Ser Val
1 5 10 15
Thr Ser Phe Phe Thr Gln Gly Pro Ala Gln Arg Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

His Thr Tyr Thr Thr Gly Gly Thr Val Ala Arg Ser Thr Gln Gly Leu
1 5 10 15
Val Gly Phe Leu Ser Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Thr Thr Tyr Val Ser Val Gly His Ala Ser Gln Thr Thr Arg Arg Val
1 5 10 15

Ala Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:78:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Thr Thr Thr Val Ser Gly Gly His Ala Ser Gln Ile Thr Arg Gly Val
1 5 10 15

Thr Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:79:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Lys Thr Ser Leu Thr Gly Val Thr Arg Ala Arg Ala Ala Arg Leu
1 5 10 15

Thr Ala Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:80:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Gly	Thr	Ser	Leu	Thr	Gly	Gly	Ala	Arg	Ala	Arg	Ala	Ala	Ser	Gly	Leu
1				5				10						15	
Ala	Gly	Leu	Phe	Ser	Ser	Gly	Pro	Ser	Gln	Arg	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:81:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Val	Thr	Gln	Val	Ser	Pro	Pro	Gln	Ala	Gly	Tyr	Thr	Thr	Ser	Val	Leu
1				5				10						15	
Thr	Gly	Ile	Leu	Ser	Pro	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:82:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Val	Thr	Gln	Val	Ser	Gly	Gly	Gln	Ala	Gly	Tyr	Thr	Thr	Ser	Val	Leu
1				5				10						15	
Thr	Gly	Ile	Leu	Ser	Pro	Gly	Ala	Lys	Gln	Asn	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:83:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Gly	Thr	Tyr	Thr	Val	Gly	Gly	Ala	Ser	Ala	Phe	Thr	Thr	Ser	Arg	Leu
1				5				10						15	
Thr	Ser	Leu	Phe	Ala	Leu	Gly	Pro	Ser	Gln	Arg	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:84:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Asn	Thr	His	Thr	Val	Gly	Gly	Thr	Glu	Gly	Phe	Ala	Thr	Gln	Arg	Leu
1				5				10						15	
Thr	Ser	Leu	Phe	Ala	Leu	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Ile	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:85:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Ser	Thr	Arg	Thr	Ala	Gly	Gly	Ala	Gln	Ala	Phe	Asn	Thr	Tyr	Gly	Val
1				5				10						15	
Ala	Ser	Ile	Phe	Ser	Pro	Gly	Pro	Ser	Gln	Arg	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:86:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Gln	Thr	His	Thr	Val	Gly	Gly	Ser	Thr	Ala	His	Asn	Ala	Arg	Thr	Leu
1				5					10					15	
Thr	Gly	Met	Phe	Ser	Leu	Gly	Ala	Arg	Gln	Lys	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:87:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

Asn	Thr	Arg	Thr	Val	Ala	Gly	Ser	Ala	Ala	Ala	Thr	Thr	Arg	Gly	Phe
1				5				10						15	
Thr	Ser	Met	Phe	Ser	Ser	Gly	Ser	Lys	Gln	Asn	Leu	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Gln	Thr	Arg	Thr	Val	Gly	Gly	Gln	Val	Gly	His	Ser	Val	Arg	Gly	Phe
1				5				10						15	
Thr	Ser	Leu	Phe	Ser	Ala	Gly	Ser	Ala	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:89:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Glu Thr His Thr Thr Gly Ala Val Ser Gly His Thr Thr Asn Val Leu
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ser Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:90:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Val Thr Arg Thr Thr Gly Glu Val Ala Ala Arg Thr Ala Asn Thr Phe
1 5 10 15

Ala Ser Leu Phe Thr Thr Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:91:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Thr Thr Tyr Ser Ser Gly Gln Glu Ala Gly Arg Thr Val Ala Gly Phe
1 5 10 15

Ala Gly Leu Phe Thr Thr Gly Ala Lys Gln Asn Leu Tyr Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:92:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Ser	Thr	Ser	Val	Val	Gly	Gly	Arg	Gln	Ala	Ser	Ala	Thr	Phe	Arg	Phe
1				5					10					15	
Thr	Ser	Phe	Phe	Ser	Arg	Gly	Pro	Thr	Gln	Glu	Ile	Lys	Leu	Ile	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:93:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Asn	Thr	Tyr	Thr	Thr	Ala	Gly	Ser	Met	Ala	Gln	Ser	Ile	Tyr	Arg	Leu
1				5					10					15	
Thr	Asp	Ile	Phe	Ser	Thr	Gly	Pro	Ser	Gln	Lys	Leu	Gln	Leu	Val	
			20				25					30			

(2) INFORMATION FOR SEQ ID NO:94:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Arg	Thr	Ile	Leu	Met	Ala	Gly	Arg	Gln	Ala	Glu	Val	Thr	Gln	Ser	Phe
1				5					10					15	
Pro	Gly	Leu	Phe	Ser	Leu	Ala	Pro	Ser	Gln	Lys	Ile	His	Leu	Ile	
			20				25						30		

(2) INFORMATION FOR SEQ ID NO:95:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Asp	Thr	Tyr	Ala	Thr	Gly	Gly	Ser	Val	Ala	Ser	Ile	Met	Ala	Gly	Ile
1				5				10						15	
Ala	Arg	Phe	Phe	Ser	Pro	Gly	Ala	Arg	Gln	Asp	Ile	Gln	Leu	Ile	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:96:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 30 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Glu	Thr	Tyr	Ala	Thr	Gly	Ala	Ser	Ala	Gly	His	Asp	Val	Ser	Ser	Phe
1				5				10						15	
Ala	Arg	Leu	Phe	Ala	Pro	Gly	Ala	Arg	Gln	Asn	Ile	Gln	Ile		
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:97:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Glu	Thr	His	Arg	Thr	Gly	Gly	Ser	Ala	Ala	Arg	Ser	Thr	Ala	Gly	Val
1				5				10						15	
Ala	Ser	Leu	Phe	Thr	Pro	Gly	Ala	Arg	Gln	Asn	Ile	Gln	Leu	Ile	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:98:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Asn Thr Arg Ala Val Gly Met Val Gln Ser Arg Thr Thr Tyr Ala Leu
1 5 10 15

Thr Ser Leu Phe Asp Ser Gly Ala Ala Gln Lys Leu Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:99:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu
1 5 10 15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:100:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Ser Val Leu Gly Ile Ala
1 5 10 15

Ser Phe Leu Thr Arg Gly Pro Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:101:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Glu	Thr	Tyr	Thr	Ser	Gly	Gly	Ala	Ala	Ser	His	Thr	Thr	Ser	Thr	Leu
1				5					10					15	
Ala	Ser	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:102:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Ala	Thr	Tyr	Thr	Ser	Gly	Gly	Val	Ala	Ser	His	Thr	Thr	Ser	Arg	Phe
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:103:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Ala	Thr	Tyr	Thr	Ser	Gly	Ala	Val	Ala	Ser	His	Thr	Thr	Ser	Arg	Phe
1				5					10					15	

Thr Ser Phe Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:104:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:105:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Gly Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:106:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

Glu	Thr	Tyr	Thr	Ser	Gly	Arg	Val	Ala	Gly	His	Thr	Thr	Ser	Gly	Phe
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:107:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

Ala	Thr	Tyr	Thr	Ser	Gly	Gly	Val	Ala	Gly	Arg	Thr	Thr	Ser	Gly	
1				5					10					15	
Phe	Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:108:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

Glu	Thr	His	Thr	Thr	Gly	Arg	Val	Ala	Gly	His	Thr	Thr	Ser	Arg	Phe
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:109:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

Glu	Thr	His	Thr	Thr	Gly	Arg	Val	Val	Gly	His	Thr	Thr	Ser	Gly
1				5					10					15

Phe	Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:110:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

Glu	Thr	His	Thr	Thr	Gly	Arg	Val	Ala	Gly	Arg	Thr	Thr	Ser	Gly	Phe
1				5					10					15	

Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val
			20					25					30	

(2) INFORMATION FOR SEQ ID NO:111:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

Thr	Thr	Tyr	Thr	Ser	Gly	Gly	Val	Ala	Gly	Arg	Thr	Thr	Ser	Gly
1				5					10					15

Phe	Thr	Ser	Leu	Phe	Ser	Ser	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:112:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

Lys	Thr	Tyr	Thr	Ser	Gly	Gly	Ala	Ala	Ser	His	Thr	Thr	Ser	Arg	
				5					10					15	
Phe	Thr	Ser	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Arg	Ile	Gln	Leu	Val
				20					25					30	

(2) INFORMATION FOR SEQ ID NO:113:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

Ser	Thr	Arg	Val	Thr	Gly	Gly	Gln	Gln	Gly	Arg	Ala	Val	His	Gly	Ile
1				5					10					15	
Ala	Ser	Leu	Phe	Ser	Leu	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
				20				25					30		

(2) INFORMATION FOR SEQ ID NO:114:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

Ser	Thr	Arg	Val	Thr	Gly	Gly	Gln	Gln	Gly	Arg	Ala	Val	Gln	Gly	Phe
1				5					10					15	

Ala Ser Leu Phe Arg Leu Gly Ala Ser Gln Glu Ile Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:115:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
 1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Asn Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:116:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly His Ala Ala His Ser Leu
 1 5 10 15

Thr Ser Leu Phe Arg Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
 20 25 30

(2) INFORMATION FOR SEQ ID NO:117:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:

Asn	Thr	Arg	Val	Thr	Gly	Gly	Arg	Gln	Gly	Arg	Ala	Ala	His	Ser	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Gln	Asn	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:118:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

Gly	Thr	Arg	Val	Thr	Gly	Gly	Arg	Gln	Gly	Arg	Ala	Ala	His	Ser	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Pro	Gly	Ala	Ser	Glu	Asn	Ile	Arg	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:119:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:

Ser	Thr	Arg	Val	Ser	Gly	Gly	Gln	Gln	Gly	Arg	Ala	Ala	His	Ser	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Thr	Leu	Gly	Ala	Ser	Gln	Asn	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:120:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

Ser	Thr	His	Val	Thr	Gly	Ala	Leu	Gln	Gly	Arg	Ala	Ala	Tyr	Gly	Ile
1				5				10					15		
Thr	Ser	Phe	Leu	Ser	His	Gly	Pro	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:121:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

Ser	Thr	Gln	Val	Met	Gly	Gly	Gln	Gln	Gly	Arg	Ala	Ala	Tyr	Ser	Leu
1				5				10					15		
Ala	Ser	Leu	Leu	Ser	Pro	Gly	Ala	Asn	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:122:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

Ser	Thr	Gln	Val	Met	Gly	Gly	Gln	Gln	Gly	Arg	Ala	Ala	Tyr	Ser	Leu
1				5				10					15		
Ala	Ser	Leu	Leu	Gly	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:123:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

Ser	Thr	Gln	Val	Met	Gly	Gly	Gln	Gln	Gly	Arg	Ala	Ala	Tyr	Ser	Leu
1				5					10					15	
Ala	Ser	Leu	Leu	Ser	Pro	Gly	Ala	Ser	Gln	Lys	Ile	Gln	Leu	Val	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:124:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

Arg	Thr	Arg	Thr	Val	Gly	Gly	Gln	Val	Gly	His	Ser	Val	Arg	Gly	Phe
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Ala	Gly	Ser	Ala	Gln	Asn	Ile	Gln	Leu	Ile	
		20						25					30		

(2) INFORMATION FOR SEQ ID NO:125:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 31 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:

Gln	Thr	Arg	Thr	Val	Gly	Gly	Gln	Val	Gly	His	Ser	Val	Arg	Gly	Phe
1				5					10					15	

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
 20 25 30

(2) INFORMATION FOR SEQ ID NO:126:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
 1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asp Ile Gln Leu Ile
 20 25 30

(2) INFORMATION FOR SEQ ID NO:127:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:127:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
 1 5 10 15

Thr Ser Leu Leu Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
 20 25 30

(2) INFORMATION FOR SEQ ID NO:128:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:128:

Gln	Thr	Arg	Thr	Val	Gly	Gly	Gln	Val	Gly	His	Ser	Val	Arg	Gly	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Ala	Gly	Ser	Ala	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:129:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:

Gln	Thr	Arg	Thr	Val	Gly	Gly	Gln	Met	Gly	His	Gly	Val	Arg	Gly	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Ala	Gly	Ser	Ala	Arg	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:130:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:

Gln	Thr	His	Thr	Val	Gly	Gly	Gln	Met	Gly	His	Gly	Val	Arg	Gly	Leu
1				5					10					15	
Thr	Ser	Leu	Phe	Ser	Ala	Gly	Ser	Ala	Gln	Asn	Ile	Gln	Leu	Ile	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:131:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:

Gln	Thr	His	Thr	Val	Gly	Gly	Gln	Met	Gly	His	Gly	Val	Arg	Gly	Leu
1				5				10					15		
Thr	Asn	Leu	Phe	Ser	Ala	Gly	Ser	Ala	Gln	Asn	Ile	Gln	Leu	Ile	
		20					25						30		

(2) INFORMATION FOR SEQ ID NO:132:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:132:

Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	His	Thr	Val	Ser	Gly	Phe
1				5				10					15		
Val	Ser	Leu	Leu	Ala	Pro	Gly	Ala								
			20												

(2) INFORMATION FOR SEQ ID NO:133:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label=Ahe
/note=2-amino heptanoic is butyl alanine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:133:

Xaa	Glu	Thr	His	Val	Thr	Gly	Gly	Ser	Ala	Gly	His	Thr	Val	Ser	Gly
1				5				10						15	
Phe	Val	Ser	Leu	Leu	Ala	Pro	Gly	Ala	Lys	Gln	Asn	Val	Gln	Leu	
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:134:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:134:

Ser	Leu	Phe	Xaa	Xaa	Gly
1				5	

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